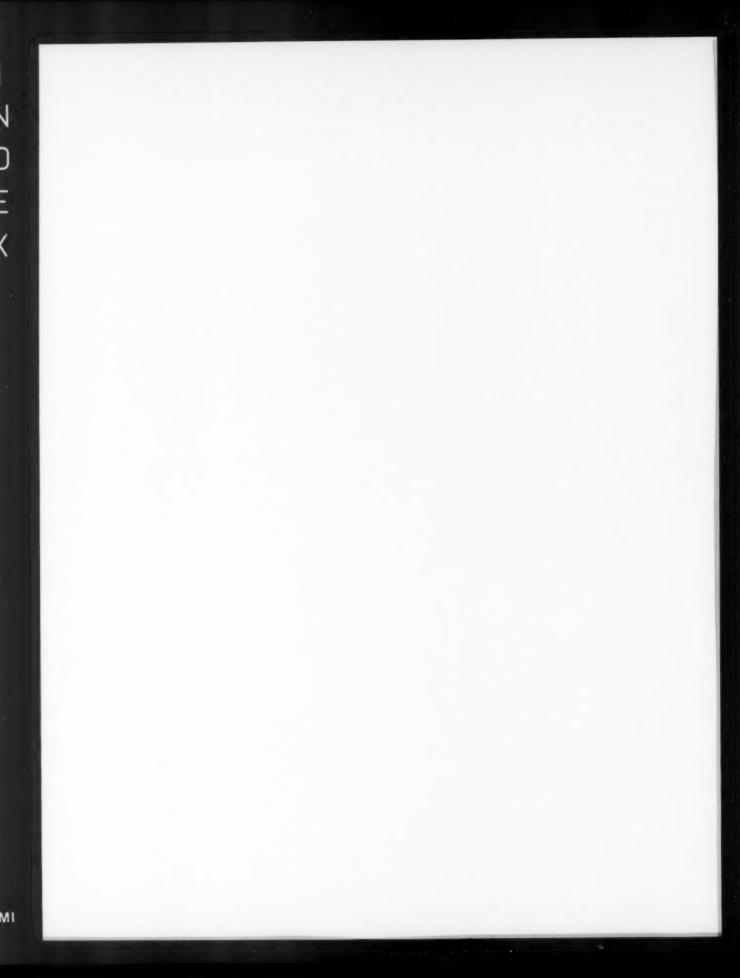
INDEX

COMBUSTION, EXPLOSION, AND SHOCK WAVES Volume 4, Numbers 1-4, 1968



Combustion, Explosion, and Shock Waves

Contents

Volume 4, Number 1 · Spring 1968

Editorial Board Fizika Goreniya i Vzryva a publication of the Siberian division of the Academy of Sciences USSR M. A. Lavrent'ev, Editor-in-Chief R. I. Soloukhin. Associate Editor S. S. Khlevnoi, Corresponding Secretary V. K. Bobolev B. V. Voitsekhovskii S. S. Grigoryan A. A. Deribas M. M. Dokuchaev A. N. Dremin F. I. Dubovitskii

N. V. Zvolinskii Ya. B. Zel'dovich O. I. Leipunskii L. V. Ovsyannikov P. F. Pokhil V. N. Rodionov K. I. Shchelkin

	Russian	English
Ignition of a Ballistite Propellant by Light Radiation.		
V. F. Mikheev, A. A. Koval'skii, and S. S. Khlevnoi	3	1
Burning Rate of Condensed Composite Systems with Different		
Degrees of Mixing. A. F. Belyaev, Yu. V. Frolov,		
and V. F. Dubovitskii	10	5
A Stoichiometric Coefficient Reflecting the Elemental Composition		
of Fuel and Oxidizer. N. N. Bakhman	16	9
Dynamic Ignition Regimes. A. E. Averson, V. V. Barzykin,		
and A. G. Merzhanov	20	11
Use of a Pulse Mass Spectrometer to Investigate the High-Speed		
Processes Associated with the High-Temperature		
Decomposition of Ammonium Perchlorate.		
O. P. Korobeinichev, V. V. Boldyrev, and		
Yu. Ya. Karpenko	33	19
Effect of a Compressible Boundary on the Propagation of		
a Gas Detonation. K. I. Shchelkin	39	23
Calculation of the Initiation Pressure of Shock-Initiated		
Homogeneous Explosives. I. M. Voskoboinikov,		
V. M. Bogomolov, and A. Ya. Apin	45	26
Adiabatic Thermal Explosion of Entrapped Gas in Liquids.		
Yu. M. Volynskii-Basmanov and V. I. Kuz'min	50	29
Estimation of Solution and Asymptotic Behavior of the		
Problem of Flame Propagation in a Homogeneous		
Gas Mixture. I. S. Lyubchenko	56	32
Burning of Liquids in Vessels with Change of Level.		
E. S. Artemenko and V. I. Blinov	69	39
Measurement of the Activation Energy of the Process of		
Ion Formation in a Flame at Atmospheric Pressure.		
N. A. Nesterko and V. S. Rossikhin	76	43
Electrical Conductivity in the Crucible of a Coke-Burning		
Blast Furnace. V. T. Plitsyn, B. S. Fialkov, and		
Ya. I. Magun.	84	48
	(Contin	nued)

Contents (cont'd)

	Russian page	Englis
Effect of Thickness of Diffusion-Temperature Layer on Flame Height. V. N. Podymov		
and I. F. Chuchalin	91	54
Absolute Stability of Shock Waves. A. S. Pleshanov	95	56
Simulation of the Process of Wave Formation in Explosive Welding. A. A. Deribas,		
V. M. Kudinov, F. I. Matveenkov, and V. A. Simonov.	100	59
Measurement of the Residual Temperature of a Substance After Shock Compression.		
S. S. Batsanov, G. S. Doronin, V. P. Koshevoi, and V. P. Stupnikov	108	64
Dynamic Compressibility of Carbon. A. N. Dremin and S. V. Pershin	112	66
Motion of Sandy Soil Following an Underground Explosion. I. L. Zel'manov, O. S. Kolkov,		
A. M. Tikhomirov, and A. F. Shatsukevich	116	69
Brief Communications		
Ignition of Nitroglycerin Powder by Light Radiation in a Cold Stream of Gas. S. S. Khlevnoi		
and A. P. Kalmykova	122	74
Compressibility of Urotropin Powder. V. K. Bobolev, V. A. Burov, and A. V. Dubovik	124	75
Effect of the Explosion of a Sheet Charge on Metal Plates. A. P. Rybakov, E. V. Menteshov,		
and V. P. Shavkov	126	77

Combustion, Explosion, and Shock Waves

Contents

Volume 4, Number 2 · Summer 1968

		Russian	Englis
Editorial Board	Relaxation Processes in Gases. Part II. Establishment of		
Fizika Goreniya i Vzryva	Rotational Equilibrium (Survey). A. I. Osipov	139	79
a publication of the Siberian division of the	Hot-Wire Ignition of Ballistite Propellants. V. E. Zarko and S. S. Khlevnoi	158	89
Academy of Sciences USSR	Ignition of Condensed Substances by Convective Heat Fluxes of Medium Intensity under Dynamic Conditions.		
M. A. Lavrent'ev, Editor-in-Chief	V. I. Rozenband, V. V. Barzykin, and A. G. Merzhanov Hot-Surface Ignition of Gases with Allowance for Diffusion	171	96
R. I. Soloukhin, Associate Editor	and Hydrodynamics. K. G. Shkadinskii and V. V. Barzykin	176	100
S. S. Khlevnoi, Corresponding Secretary	Combustibility and Ignitability of Mixtures of High-Calorific Metal Powders and Organic Substances with the Formula		
	CxHyOz. V. V. Gorbunov, V. G. Khromov, and	100	105
V. K. Bobolev B. V. Voitsekhovskii S. S. Grigoryan A. A. Deribas M. M. Dokuchaev	A. A. Shidlovskii	182	105
	A. M. Stepanov	189	109
A. N. Dremin F. I. Dubovitskii	A. A. Zenin, A. P. Glazkova, O. I. Leipunskii, and V. K. Bobolev	196	113
N. V. Zvolinskii Ya. B. Zel'dovich	Theory of Combustion of Fast-Burning Condensed Substances.	190	110
O. I. Leipunskii L. V. Ovsyannikov P. F. Pokhil V. N. Rodionov K. I. Shchelikin	E. I. Maksimov	203	117
	in Flow-Through Systems. F. B. Moin and V. U. Shevchuk	209	121
	Experimental Determination of the Activation Energy of Excited Radical Formation in Low-Pressure Acetylene-		
	Air Flames. L. N. Glushko and V. I. Tverdokhlebov	215	124
	Axisymmetric Flow. V. Ya. Basevich, S. M. Kogarko,		
	E. I. Dinaburg, and S. L. Kamenomostskaya	220 (Conti	127

Contents (cont'd)

MI

	Rusalan page	English
Critical Diameter of a Wetted Tube. S. M. Kogarko, A. G. Lyamin, and V. A. Mikhailov	234	136
Detonability of Mixtures Based on Ammonium Perchlorate. A. F. Belyaev, A. I. Korotkov,		
A. V. Obmenin, and A. A. Sulimov	238	138
Anomalous Shock Compressibility of Porous Materials. V. S. Trofimov, G. A. Adadurov,		
S, V. Pershin, and A. N. Dremin	244	142
Formation and Propagation of Explosion Stress Waves in Rocks. A. B. Fadeev	254	148
Approximate Calculation of the Axisymmetric Motions of a Pipe Wall in Explosive		
Welding, R. P. Didyk, S. S. Krasnovskii, and A. G. Teslenko	260	153
Investigation of Luminous Hydrocarbon Diffusion Flames by High-Speed Motion-Picture		
Photography. P. A. Tesner, A. M. Tsybulevskii, and T. D. Snegireva	266	156
Brief Communications		
Decomposition of Explosive Solutions in a Shock Wave. G. S. Sosnova, V. M. Bogomolov,		
I. M. Voskoboinikov, and A. Ya. Apin	272	160
Action of Explosion on Matter, Dynamic Compression of Single-Crystal NaCl.		
S. S. Batsanov, P. A. Zhdan, and V. N. Kolomeichuk	274	161

Combustion, Explosion, and Shock Waves

Contents

Editorial Board

Volume 4, Number 3 · Fall 1968

383

(Continued)

Fizika Goreniya i Vzryva	Polyformaldehyde Mixtures. A. A. Zenin, A. P. Glazkova,		
a publication of the	O. I. Leipunskii, and V. K. Bobolev.	299	16
Siberian division of the	Thermal Decomposition Kinetics of Ammonium Perchlorate		
Academy of Sciences USSR	at High Temperatures. G. B. Manelis, A. V. Proshchin,		
	Yu. I. Rubtsov, V. A. Strunin, and A. S. Shteinberg	305	16
M. A. Lavrent'ev.	Anomalies in the Burning of Ammonium Perchlorate and		
Editor-in-Chief	Ammonium Nitrate. A. P. Glazkova	314	17
R. I. Soloukhin,	Combustion and Ignition of Particles of Finely Dispersed		
Associate Editor	Aluminum. A. F. Belyaev, Yu. V. Frolov, and		
S. S. Khlevnoi,	A. I. Korotkov	323	18
Corresponding Secretary	Action of V2O5 on the Burning Rate of Compositions Based		
	on Ammonium Perchlorate and Metal Fuels.		
V. K. Bobolev	L. D. Romodanova, P. F. Pokhil, and E. S. Kadaner	330	18
B. V. Voitsekhovskii	Ignition of a Metal Particle. M. A. Gurevich and A. M. Stepanov	334	18
S. S. Grigoryan	Gas-Phase Autoignition Regime in the Combustion of Pyroxylin		
A. A. Deribas M. M. Dokuchaev	and N Powder. A. K. Filonenko	343	19
A. N. Dremin	Effect of Charge Diameter on the Burning Rate of Explosives.		
F. I. Dubovitskii	V. E. Annikov and B. N. Kondrikov	350	19
N. V. Zvolinskii Ya. B. Zel'dovich	Stability of the Normal Flame Front. L. A. Gussak,		
O. I. Leipunskii	E. N. Sprintsina, and K. I. Shchelkin	358	20
L. V. Ovsyannikov	Characteristic Burning Times of Fuel-Air Mixtures.		
P. F. Pokhil V. N. Rodionov	V. K. Baev and P. K. Tret'yakov	367	20
K. I. Shchelkin	Experimental Investigation of the Combustion Stability of		
	Fuel Droplets Burning in a Turbulent Flow. R. S. Tyul'panov		
	and A. I. Alimpiev	377	21
	Activation Energy for Formation of Excited Radicals in an		
	Undisturbed Acetylene-Air Flame and in a Flame Reinforced		
	by a High-Frequency Discharge. N. A. Nesterko and		

Effect of Aluminum on the Burning of Ammonium Perchlorate-

Contents (cont'd)

11

	Russian	English page
Spectroscopic Investigation of the Decomposition of Nitromethane in Shock Waves.		
A. A. Borisov, I. S. Zaslonko, and S. M. Kogarko	387	222
Determination of the Parameters of a Nonstationary Compression Wave. G. A. Adadurov,		
V. S. Trofimov, and V. A. Yakovleva	397	228
Disintegration of Solid Explosives in a Shock Wave. E. N. Aleksandrov, V. A. Veretennikov,		
A. N. Dremin, and K. K. Shvedov	400	230
Electric Explosions in Sandy Soil. I. L. Zel'manov, O. S. Kolkov, A. M. Tikhomirov, and		
A. F. Shatsukevich	408	236
Motion of Soil Particles Following an Underground Explosion. T. N. Chubinishvili	414	240
Effect of an Explosion on Matter. Protection of Compressed Material Against Contamination		
with Bomb Material. S. S. Batsanov, V. M. Nigmatullina, and I. G. Yudelevich	422	246
Brief Communications		
Effect of Heat-Conducting Walls on the Hydrodynamic Combustion Stability of Liquid		
Explosives. A. D. Margolin, V. M. Margulis, and P. F. Pokhil	426	249

COMBUSTION, EXPLOSION, AND SHOCK WAVES

A translation of Fizika Goreniya i Vzryva

Volume 4, Number 4

October-December, 1968

CONTENTS

	Eng	/Russ.
Report on the First All-Union Symposium on Combustion and Explosion	251	443
Kinetics of the Combustion Reactions of Gas-Phase Systems-V. N. Kondrat'ev	253	446
Combustion Hydrodynamics-K. I. Shchelkin	258	455
-S. S. Novikov, P. F. Pokhil, and Yu. S. Ryazantsev	266	469
Theory of Nonstationary Combustion of Homogeneous Propellants—B. V. Novozhilov Some Characteristics of Dynamic Ignition Regimes—V. I. Rozenband, A. E. Averson,	276	482
V. V. Barzykin, and A. G. Merzhanov	283	494
in the Heated Layer-V. I. Lisitskii and K. V. Pribytkova	287	501
State Flame Propagation Regime - V. N. Vilyunov	295	513
and V. I. Rozenband	299	519
V. T. Gontkovskaya, B. I. Khaikin, and A. G. Merzhanov	304	526
-A. G. Merzhanov, B. M. Slutsker, and A. S. Shteinberg	312	540
and A. G. Merzhanov	317	548
in a Vessel-L. Yu. Artyukh, L. A. Vulis, A. T. Luk'yanov, and S. N. Sharaya	322	557
Degenerate Thermal Explosion Regimes of Autocatalytic Reactions—E. G. Zelikman Physical Basis and Mathematical Model of the Propagation of a Flame	326	563
over the Surface of a Solid Propellant during Ignition—B. A. Raizberg Effect of Initial Temperature and Transparency of Nitroglycerine Powder	330	568
on Its Ignition by a Light Pulse-S. S. Khlevnoi and V. F. Mikheev Effect of Ionizing Radiation on the Combustion of Ammonium Perchlorate and Composite Systems Based on Ammonium Perchlorate-V. A. Strunin,	336	579
G. B. Manelis, A. N. Ponomarev, and V. L. Tal'roze	339	584
-B. I. Khaikin, A. K. Filonenko, and S. I. Khudyaev	343	591
Combustion of Condensed Systems in a Mass-Force Field-B. B. Serkov, E. I. Maksimov,		
and A. G. Merzhanov	349	600
-N. D. Tolstykh and B. P. Pavlysh	353	607
INDEX		
Tables of Contents, Volume 4, Numbers 1-4, 1968	359	

М١

